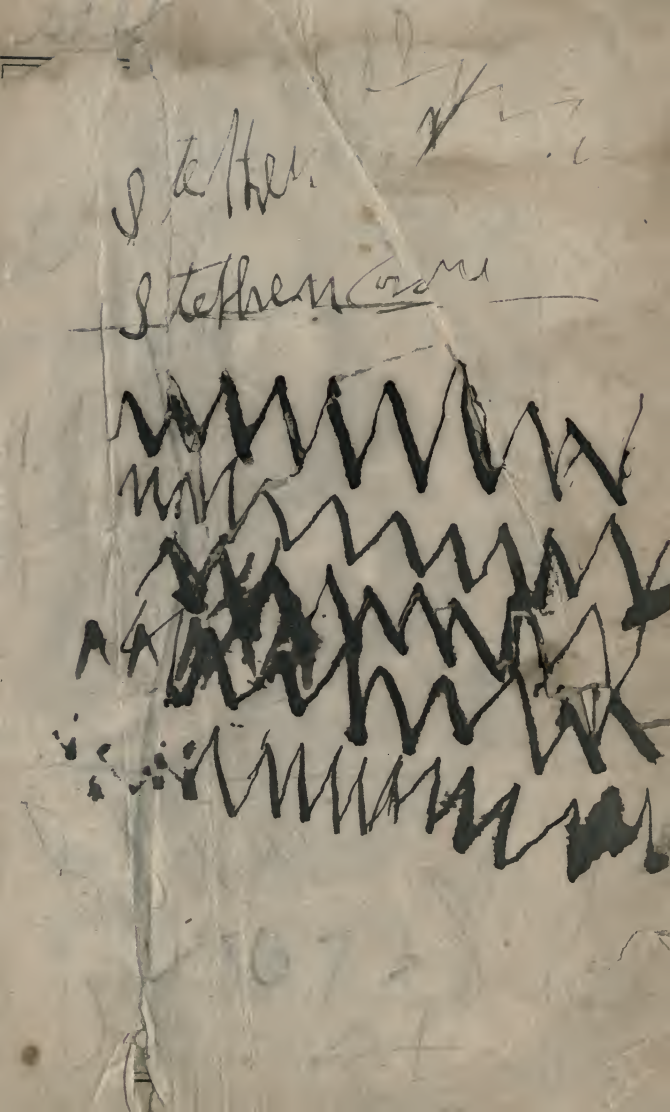
ELLEN'S FIRST LESSONS IN NUMBERS

ILLUSTRATED.

CHARLES SCRIBNER'S SONS,
NEW YORK.



PETER'S FIRST LESSONS

IN NUMBERS.

ILLUSTRATED.

CHARLES SCRIBNER'S SONS,
NEW YORK.

NATURAL SERIES.

THE

FIRST LESSONS

IN NUMBERS;

AN

ILLUSTRATED TABLE BOOK,

DESIGNED FOR

ELEMENTARY INSTRUCTION.

BY

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PREFACE.

In the preparation of this little book, the author has aimed to make it simply a convenient storehouse from which the Teacher is to draw materials for the instruction of his pupils; and, therefore, it is not intended to "exempt the teacher from the labor of explaining orally, setting sums, &c." It does not propose "to teach the pupil how to think," for this must be done by a *living teacher;* and no book, whatever its pretensions, can be more than an *aid.* In the first lessons, but little more should be done than to awaken the senses to the perception of numbers as exhibited in surrounding objects, and make the little pupils acquainted with some of the simpler facts. Whoever attempts to force upon them reasons, solutions, definitions, and relations, violates the fundamental law of the development of the human mind; and, although the pupils may become learned in the book, they are, nevertheless, on the broad road to conceited ignorance.

New York, May 1, 1865.

TO THE TEACHER.

THE teacher will readily perceive that this little book is emphatically an illustrated table-book, and not an elementary Arithmetic; and that its object is to suggest to the little pupil SOMETHING TO DO. While it is impossible in a work so small to do more than give suggestions, the teacher will find little difficulty in supplying the deficiency by the use of the blackboard. Although there is nothing in the book which the children ought to be required to commit to memory as a set task, yet each step should be thoroughly mastered by means of oral and written exercises before proceeding to the next.

To accompany the series, there is a Manual prepared expressly for the use of the teacher; containing model lessons suggestive of the best methods of oral, written, individual, and class instruction.

FIRST LESSONS IN NUMBERS.

LESSON I.

NOTE.—Each of the following Lessons is illustrated by a Model Exercise given in detail in a Teacher's Manual, prepared expressly to accompany this work.

One stump; *1*, 1.

Two trees; *2*, 2.

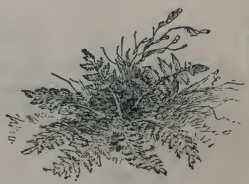
Three boys; *Three* kites; *3*, 3.

Four bars; *4*, 4.

Five fowls; *5*, 5.

LESSON II.

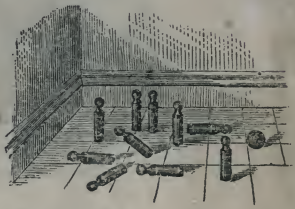
Six stones; *6*, 6.



Seven leaves; *7*, 7.

Eight boats; *8*, 8.

Nine balls; *9*, 9.



Ten tenpins; *10*, 10.

NOTE TO THE TEACHER.—Questions like the following should be asked on the foregoing illustrations: How many chickens stand on the fence? How many boats have sails? How many men in the rowboat? How many tenpins stand up? How many have fallen down? (See Manual of instruction for teachers.)

LESSON III.*

(See Manual, Sec. I., Exercise I.)

Copy and read the following exercises:

Ex. 1.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	3	3	1	3	2	3	2	3	3	2
	1	2	0	2	3	2	0	2	2	3
	2	1	3	1	2	4	4	0	4	2
	1	2	5	2	0	2	5	2	5	4
	2	3	1	5	1	3	0	3	3	2
	1	1	2	3	2	3	4	5	4	3

Ex. 2.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	7	5	6	6	6	7	6	3	7	4
	3	7	9	7	9	3	7	1	7	8
	6	0	3	1	7	9	8	7	6	0
	7	7	5	3	3	3	3	6	8	3
	3	3	7	8	7	2	7	8	3	1
	7	9	3	1	6	0	2	3	7	6

* *Note for the Teacher.*—These exercises should be copied neatly on the slate, and read at recitation by the members of the class. Particular attention should be given to the formation of figures.

LESSON IV.*

(See Manual, Sec. I., Exercise I.)

$3 = 1, 1, 1.$
$5 = 1, 1, 1, 1, 1.$
$2 = 1, 1.$

or

3 equals 1, 1, 1, units.
5 equals 1, 1, 1, 1, 1 units.
2 equals 1, 1, units.

Copy and read the following exercises:

Ex. 1.

Model.	(1)	(2)	(3)	(4)	(5)	(6)
$3 = 1, 1, 1.$	4	9	7	4	5	3
$5 = 1, 1, 1, 1, 1.$	5	7	6	6	7	7
$4 = 1, 1, 1, 1.$	6	8	5	7	6	6

Ex. 2.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4	6	9	6	9	4	4	4	9	4
7	3	1	7	4	1	7	3	6	1
3	4	3	8	3	3	8	7	7	6
9	1	0	3	6	2	6	6	8	7
1	3	7	8	7	4	3	8	3	8
7	8	1	7	3	6	7	3	7	3

* *Note for the Teacher.*—The teacher should explain the meaning and use of the sign of equality (=) in the following exercises.

LESSON V.

Fifteen books; *15*, 15. *Eighteen* bricks; *18*, 18.

Ex. 1.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)
	11	17	13	16	15	12	14	13
	12	18	17	18	16	16	17	17
	13	19	16	17	20	13	16	16
	14	20	19	15	18	17	14	19
	15	14	13	16	19	18	10	20
	16	15	14	13	20	12	17	20

QUESTIONS.—How many books on the upper shelf? How many are lying down? How many bricks in the pile? How many bricks in the lowest row? How many bricks in the next row? How many are lying on the ground? How many books are standing up? How many books on the lower shelf? How many books on both shelves? If all the books were removed from the lower shelf, how many would remain on the upper shelf? If I should take away three books from the upper shelf, how many would remain? How many would remain on both? etc.

LESSON VI.

One boy and 1 boy are how many boys?
Two houses and 1 house are how many?
3 cows and 1 cow are how many?
4 sheep and 1 sheep are how many?
5 trees and 1 tree are how many?
6 fishes and 1 fish are how many?
7 stones and 1 stone are how many?
8 posts and 1 post are how many?
9 birds and 1 bird are how many?

LESSON VII.*

(See Manual, Sec. I., Exercise II.)

Copy and complete the following tables:

Ex. 1.

Model.	(1.)	(2.)	(3.)	(4.)
3+1=4	6+1	8+1	8+1	4+1
4+1=5	1+6	9+1	3+1	2+1
7+1=8	3+1	7+1	1+3	3+1
2+1=3	2+1	1+7	6+1	6+1
4+1=5	3+1	6+1	8+1	3+1
3+1=4	6+1	7+1	7+1	8+1

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)
4+1	8+1	4+1	8+1	1+6
6+1	1+8	8+1	7+1	8+1
8+1	7+1	9+1	3+1	1+8
1+6	6+1	6+1	9+1	1+7
7+1	9+1	3+1	1+9	1+7
6+1	3+1	4+1	1+7	1+7

* *Note for the Teacher.*—Before copying the following lessons the sign of addition (+) should be explained to the pupils.

LESSON VIII.

One boy and 2 boys are how many?
2 girls and 2 girls are how many?
3 windows and 2 windows are how many?
4 boats and 2 boats are how many?
5 chicks and 2 chicks are how many?
6 ducks and 2 ducks are how many?
7 sheep and 2 sheep are how many?
8 plates and 2 plates are how many?
9 birds and 2 birds are how many?

LESSON IX.

(See Manual, Sec. I., Exercise II.)

Copy and complete the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
5+2=	3+2	2+2	4+2	5+2	4+2
4+2=	2+3	2+2	2+5	2+5	2+2
2+4=	4+2	3+2	4+2	3+2	1+2
5+2=	2+5	2+2	1+2	2+3	2+1
2+2=	2+4	2+2	2+3	1+2	3+2
3+2=	3+2	1+2	1+2	2+1	4+2

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
2+1	1+4	2+3	4+2	5+1	7+1
1+2	3+2	3+2	5+2	4+1	4+2
1+3	2+3	1+5	6+1	2+4	1+2
2+2	4+1	5+2	1+6	5+2	0+2
4+1	5+1	2+5	2+5	4+2	2+0
3+2	1+5	3+2	5+1	2+5	4+2

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6+2	8+2	3+2	5+2	2+7	4+2
2+6	7+2	5+2	2+3	0+7	2+2
7+2	6+2	2+5	2+7	0+2	5+2
2+7	8+2	7+2	2+9	2+0	7+2
4+2	1+2	2+8	2+8	1+0	6+2
7+2	5+2	2+7	2+6	8+0	8+2

LESSON X.

One boy and 3 boys are how many?
2 houses and 3 houses are how many?
3 trees and 3 trees are how many?
4 girls and 3 girls are how many?
5 caps and 3 caps are how many?
6 skates and 3 skates are how many?
7 posts and 3 posts are how many?
8 sleds and 3 sleds are how many?
9 hoods and 3 hoods are how many?

NOTE.—The teacher should dictate problems referring to the objects in the illustrations, thus: Two boys have hold of hands; how many would there be if another should join them? There are six trees; if two were cut down, how many would remain standing? Two little girls are skating and two are looking on; how many in all? There are five houses; if two should be burned up how many would remain? If one boy has two skates, how many skates will two boys have? There are eight boys skating, one of them has fallen down; how many remain standing? One house and one house are how many? One tree and five trees are how many? Four trees and two trees are how many? Two trees and four trees are how many?

LESSON XI.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	1+3	3+1	4+3	1+5	3+4	4+3
	3+1	3+4	3+2	1+3	2+4	3+2
	3+4	1+4	2+1	1+6	4+3	2+1
	6+1	3+1	1+3	2+4	4+2	3+5
	5+2	5+2	4+3	2+5	5+2	5+2
	4+3	2+5	5+1	3+2	5+3	3+2

Ex. 2.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	5+3	4+3	3+9	4+3	7+3	6+3
	3+5	5+3	7+3	7+3	4+3	7+3
	6+1	7+3	6+3	3+7	3+4	3+7
	6+3	8+3	3+9	4+3	7+3	5+3
	5+3	6+3	7+3	6+3	8+3	4+3
	6+3	9+3	6+3	3+6	3+4	3+0

Ex. 3.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	6+3	3+3	3+7	6+3	2+6	3+3
	3+6	7+3	2+6	3+2	6+1	2+3
	9+3	2+3	3+2	2+8	1+8	4+3
	8+3	2+7	1+5	8+3	8+3	3+2
	3+8	6+2	1+7	9+3	3+4	2+9
	6+2	2+3	6+1	4+2	7+2	3+2

LESSON XII.

One ship and 4 ships are how many?
2 boats and 4 boats are how many?
3 towers and 4 towers are how many?
4 houses and 4 houses are how many?
5 logs and 4 logs are how many?
6 barrels and 4 barrels are how many?
7 sea-gulls and 4 sea-gulls are how many?
8 masts and 4 masts are how many?
9 men and 4 men are how many?

LESSON XIII.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4+2	3+4	5+4	0+4	1+3	7+1
2+4	2+4	4+2	4+0	4+2	6+3
3+2	2+3	2+3	7+1	2+3	4+2
2+1	3+1	3+5	8+0	3+1	7+3
3+4	4+2	5+2	8+1	8+1	6+2
4+3	4+4	2+4	3+1	1+8	2+3

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
5+4	4+6	7+4	2+4	4+0	6+4
6+4	4+7	3+4	0+4	3+4	4+6
4+6	4+3	8+4	4+0	0+4	6+2
3+6	4+8	7+4	8+4	9+4	6+4
4+5	4+9	6+4	9+4	7+4	4+6
5+6	4+7	3+4	3+4	4+7	3+4

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6+4	4+2	5+4	9+3	0+4	4+1
4+6	2+4	3+4	4+3	0+3	1+0
3+4	6+4	2+4	2+2	3+2	0+1
2+4	8+2	7+3	3+3	2+0	1+1
4+3	2+4	6+3	4+4	1+0	2+2
6+3	6+4	8+2	7+3	3+2	3+3

LESSON XIV.

One house and 5 houses are how many?
2 lilies and 5 lilies are how many?
3 pines and 5 pines are how many?
4 windows and 5 windows are how many?
5 ducks and 5 ducks are how many?
6 islands and 5 islands are 11 islands.
7 leaves and 5 leaves are 12 leaves.
8 flowers and 5 flowers are 13 flowers.
9 doors and 5 doors are 14 doors.

To the Teacher.—Oral questions and problems referring to the above and following illustrations should be given to the class. (See Manual Ex. III. Less. II.) The pupils should be required to ask questions of each other referring to the objects in the illustrations.

Problems.—If there are six houses and each house has one door, how many doors have all the houses? Five of the doors are standing open, how many are shut? If a hunter should shoot five of the ducks in the pond, how many would escape? If a little girl should pick two of the water lilies, how many would remain? Five ducks and 3 ducks are how many? Three trees and 5 trees are how many? Five houses and two houses are how many? Five men and two men are how many?

LESSON XV.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
5+6	6+5	6+5	5+6	6+7	3+5
5+3	7+5	5+6	7+5	7+5	6+5
5+7	8+5	7+5	8+5	3+5	5+6
5+8	9+5	5+8	5+6	6+5	7+5
5+9	8+5	9+5	5+7	7+5	3+5
5+6	3+5	7+5	5+6	5+6	6+5

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3+5	5+2	5+3	5+2	6+4	4+3
5+2	6+2	5+2	8+1	5+4	7+2
2+3	7+2	3+5	7+2	7+3	4+3
3+5	5+3	9+1	7+3	6+4	4+4
4+2	5+5	8+2	3+2	5+5	6+2
4+5	3+5	7+3	4+3	9+1	6+2

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7+4	4+6	7+5	9+3	4+6	4+3
4+5	6+4	5+6	8+3	3+2	6+3
6+4	3+5	7+2	7+5	3+1	5+2
8+5	5+5	9+3	6+2	6+7	4+7
7+6	2+2	4+3	9+3	6+8	4+4
7+3	3+3	9+1	7+2	3+7	5+5

LESSON XVI.

One branch and 6 branches are 7 branches.
2 stones and 6 stones are 8 stones.
3 cows and 6 cows are 9 cows.
4 sheep and 6 sheep are 10 sheep.
5 trees and 6 trees are 11 trees.
6 lambs and 6 lambs are 12 lambs.
7 feet and 6 feet are 13 feet.
8 men and 6 men are 14 men.
9 birds and 6 birds are 15 birds.

PROBLEMS.—If 3 cows were driven home, how many would remain in the pasture? If a boy should drive away 6 of the sheep, how many would remain? Since 1 cow has 4 feet, how many feet have 2 cows? A farmer had 10 sheep, he sold 6 of them, how many had he left? There are 9 cows in the pasture, 6 of the cows have been milked; how many have yet to be milked? Two sheep and 3 sheep are how many? Two cows and 4 cows are how many? Five trees and 4 trees are how many? How many feet have 2 sheep? How many feet have 4 sheep? How many feet have 8 sheep? How many horns have three cows? How many horns have 5 cows? How many horns have 6 cows? Five boats and 3 boats are how many? Six boys and 5 boys are how many?

LESSON XVII.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8+3	3+3	8+3	6+2	8+2	8+2
7+2	6+5	7+4	8+3	7+3	7+2
9+1	2+2	6+2	7+4	2+4	3+6
8+3	1+1	9+1	5+4	9+2	7+2
7+3	7+3	7+4	4+4	6+1	4+2
2+3	6+2	3+2	2+2	3+0	4+1

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6+5	4+7	4+6	6+9	8+6	4+6
6+6	6+6	6+7	9+6	3+6	6+8
3+6	3+6	6+8	8+6	6+7	6+9
4+6	8+6	6+3	7+6	7+6	6+3
9+6	6+8	6+9	4+6	9+6	6+4
7+6	3+8	6+7	3+6	8+6	6+8

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8+6	3+3	8+3	9+3	4+7	4+6
6+7	4+4	5+7	6+7	6+3	3+7
3+4	5+5	6+9	8+6	8+3	8+3
6+3	6+6	3+7	3+7	4+7	4+3
4+4	2+2	8+6	4+3	6+7	7+2
3+3	0+0	4+7	7+2	4+7	6+3

LESSON XVIII.

One rake and 7 rakes are 8 rakes.
2 forks and 7 forks are 9 forks.
3 horses and 7 horses are 10 horses.
4 men and 7 men are 11 men.
5 scythes and 7 scythes are 12 scythes.
6 jugs and 7 jugs are 13 jugs.
7 cups and 7 cups are 14 cups.
8 wagons and 7 wagons are 15 wagons.
9 trees and 7 trees are 16 trees.

PROB.—There are five bunches of hay on one side of the wagon and five on the other, how many on both? There are three rakes, one is standing against a tree, the rest are in use; how many are in use? Four rakes and 5 rakes are how many? Five baskets and 6 baskets are how many? Six cups and 5 cups are how many? Eight horses and 3 horses are how many? Seven trees and 4 trees are how many? Six loads of hay and 2 loads are how many?

LESSON XIX.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3+7	3+4	4+4	3+1	4+3	8+3
4+3	9+3	3+3	7+2	6+4	4+2
6+4	9+2	2+2	7+4	8+4	9+3
3+4	7+4	1+1	7+3	5+3	7+2
8+4	8+3	0+0	6+3	7+4	3+8
6+4	9+3	0+1	7+2	9+3	6+2

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7+4	7+8	7+6	9+7	7+3	8+7
7+6	7+9	7+4	7+9	7+0	6+7
7+8	7+6	4+7	3+7	7+8	3+7
7+2	7+2	6+7	6+7	7+9	7+3
7+3	7+3	8+7	4+7	6+7	7+8
7+2	7+0	3+7	4+7	3+7	7+3

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7+8	4+3	4+6	9+7	6+7	4+6
6+7	6+7	6+7	4+7	6+8	7+8
3+8	3+8	8+7	6+3	3+4	3+4
9+7	4+7	3+8	8+3	7+2	6+7
6+7	6+7	3+7	9+4	4+3	3+9
4+7	3+7	4+3	7+8	6+7	4+7

LESSON XX.

One melon and 8 melons are 9 melons.
2 peaches and 8 peaches are 10 peaches.
3 cherries and 8 cherries are 11 cherries.
4 bananas and 8 bananas are 12 bananas.
5 clusters and 8 clusters are 13 clusters.
6 leaves and 8 leaves are 14 leaves.
7 plums and 8 plums are 15 plums.
8 vases and 8 vases are 16 vases.
9 vines and 8 vines are 17 vines.

PROBLEMS.—Two peaches and 5 peaches are how many? Four pine-apples and 6 pine-apples are how many? Eight oranges and 4 oranges are how many?

LESSON XXI.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6+7	5+3	8+3	8+4	1+1	3+0
5+8	6+7	7+2	5+3	3+3	0+7
3+7	8+4	6+3	6+7	4+4	8+0
4+6	4+5	5+3	8+3	4+4	6+3
4+3	8+4	7+4	4+2	5+5	3+0
4+7	3+4	6+3	6+1	6+6	8+6

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8+3	8+7	8+9	8+6	8+7	8+7
8+4	9+9	8+6	8+7	8+8	8+6
8+3	8+3	8+7	8+4	8+3	8+8
8+7	8+6	8+7	8+9	8+6	8+4
8+6	8+7	8+6	8+7	8+8	8+6
8+3	8+8	8+7	8+6	8+9	8+9

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8+8	8+7	6+7	4+4	2+0	4+6
8+3	6+7	9+3	3+3	7+0	6+0
3+7	6+9	8+7	2+2	8+9	0+8
3+4	3+8	8+9	8+8	0+8	7+9
7+6	8+3	6+9	6+6	7+0	6+9
8+9	7+4	7+8	3+3	6+8	3+8

LESSON XXII.

One rock and 9 rocks are 10 rocks.
2 trees and 9 trees are 11 trees.
3 wheels and 9 wheels are 12 wheels.
4 carts and 9 carts are 13 carts.
5 limbs and 9 limbs are 14 limbs.
6 sheds and 9 sheds are 15 sheds.
7 icicles and 9 icicles are 16 icicles.
8 posts and 9 posts are 17 posts.
9 crows and 9 crows are 18 crows.

PROBLEMS.—If there are 14 icicles on the shed, and there are 7 on one side of the post, how many are on the other? There were 3 crows sitting on the tree, two have flown away; how many remain? Four crows and 5 crows are how many? Six carts and 3 carts are how many? Nine sheds and 4 sheds are how many? Four wheels and 8 wheels are how many? Eight posts and 7 posts are how many? Five trees and 7 trees are how many? Nine rocks and 5 rocks are how many? Four branches and 8 branches are how many? Nine snow-drifts and 3 snow-drifts are how many? Three fences and 5 fences are how many?

LESSON XXIII.

(See Manual, Sec. I., Exercise II.)

Copy, complete, and read the following tables:

Ex. 1.

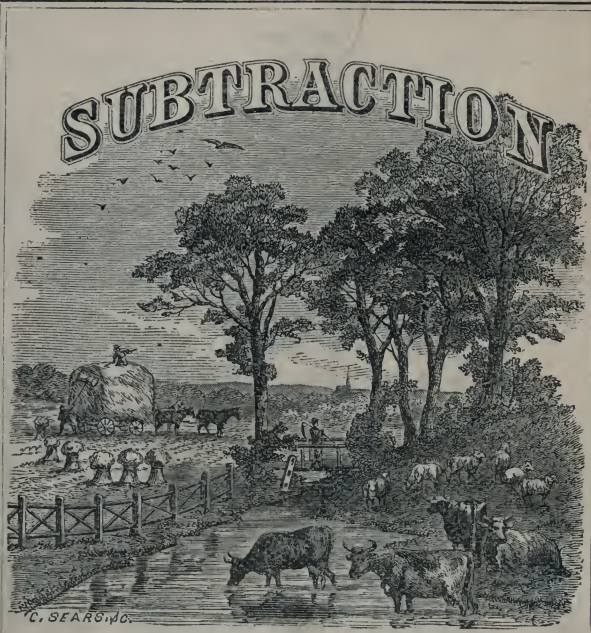
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4+3	4+3	4+6	6+7	4+6	4+3
7+3	7+2	7+1	6+3	7+4	3+8
6+1	6+7	6+6	5+3	3+4	8+3
4+2	5+7	5+6	8+6	4+3	9+3
6+8	3+2	8+3	9+7	6+7	4+8
3+2	6+6	4+7	7+7	6+4	7+1

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
9+4	4+6	4+6	8+6	9+6	4+3
9+3	7+3	7+8	7+9	9+8	9+9
6+9	3+7	8+9	9+6	3+2	6+9
3+2	8+6	6+4	9+4	9+8	3+4
4+6	6+4	3+4	9+8	6+4	9+2
5+3	3+7	7+2	3+7	3+8	4+3

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
2+2	4+2	5+6	9+9	8+8	4+6
1+1	4+6	6+7	7+7	3+9	7+3
6+6	6+2	8+8	6+6	7+9	3+8
8+9	0+0	9+9	4+4	6+8	3+8
9+9	8+0	5+5	2+2	3+8	6+7
7+7	0+9	3+3	1+1	2+4	6+7



LESSON XXIV.

One load from 1 load leaves how many?
1 fork from 2 forks leaves how many?
1 horse from 3 horses leaves how many?
1 cow from 4 cows leaves how many?
1 tree from 5 trees leaves how many?
1 sheep from 6 sheep leaves how many?
1 sheaf from 7 sheaves leaves how many?
1 post from 8 posts leaves how many?
1 bird from 9 birds leaves how many?

LESSON XXV.*

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

Model.	(1.)	(2.)	(3.)	(4.)
6−1=5	8−1	9−1	8−1	3−1
7−1=6	6−1	7−1	6−1	7−1
9−1=8	3−1	8−1	8−1	6−1
7−1=6	4−1	6−1	2−1	8−1
5−1=4	9−1	1−1	2−1	3−1
3−1=2	6−1	4−1	4−1	4−1

Ex. 2.

Model.	(1.)	(2.)	(3.)	(4.)
3−1=2	4−1	5−1	4−1	5−1
5+1=6	3−1	6+1	3+1	6+1
6+1=7	7−1	7+1	6−1	7−1
3−1=2	6−1	3−1	7−1	8+1
3+1=4	3−1	6+1	4−1	0+1
5−1=4	4−1	5+1	4+1	4−1

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4+1	4−1	9−1	1−1	4−1	1+9
3+1	6+1	6−1	1+1	3+1	9−1
4−1	3+1	8−1	1+0	4+0	8+7
3−1	4−1	7+1	1+8	5−0	1+8
6+1	7−1	9−1	8−1	6+1	4−1
2+1	9−1	3−1	3−1	9−1	9−1

* *Note for the Teacher.*—Illustrate the meaning and the use of the sign of subtraction (−) in the following Exercises.

LESSON XXVI.

Two boys from 2 boys leave how many?
2 barrels from 3 barrels leave how many?
2 cages from 4 cages leave how many?
2 rabbits from 5 rabbits leave how many?
2 turnips from 6 turnips leave how many?
2 chicks from 7 chicks leave how many?
2 branches from 8 branches leave how many?
2 birds from 9 birds leave how many?
2 ears from 10 ears leave how many?

LESSON XXVII.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3—2	4—2	4—2	4—2	4—2	4—2
6—2	6—2	6—2	6—2	6—2	8—2
4—2	7—2	3—2	8—2	4—2	7—2
3—2	3—2	4—2	4—2	3—2	3—2
5—2	4—2	6—2	3—2	4—2	4—2
6—2	6—2	4—2	6—2	6—2	5—2

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
2—2	4—2	4—2	4—2	5—2	4—2
4—2	6—2	7—2	6—2	7—2	6—2
6—2	4—2	4—2	3—2	3—2	3—2
3—2	3—2	6—2	4—2	6—2	2—2
6—2	8—2	8—2	6—2	4—2	3—2
3—2	6—2	3—2	4—2	3—2	6—2

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
2—2	6—2	4—2	9—2	6—2	9+2
8+2	8—2	7+2	7+2	8+2	7+2
7+2	4+2	4—2	8—2	2—2	10+2
4—2	7+2	8+2	6+2	7+2	11—2
6+2	3—2	7—2	8+2	11+2	12+2
4—2	8+2	6+2	4—2	11+2	7+2

LESSON XXIX.

3 books from 3 books leave how many?
3 pictures from 4 pictures leave how many?
3 globes from 5 globes leave how many?
3 chairs from 6 chairs leave how many?
3 books from 7 books leave how many?
3 pictures from 8 pictures leave how many?
3 busts from 9 busts leave how many?
3 books from 10 books leave how many?
3 pictures from 11 pictures leave how many?
3 busts from 12 busts leave how many?

LESSON XXIX.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4—3	8—3	4—3	6—3	4—3	4—3
7—3	7—3	6—3	4—3	7—3	8—3
8—3	4—3	7—3	8—3	6—2	4—3
4—3	5—3	8—3	7—3	8—3	7—3
6—3	7—3	7—2	4—3	4—3	6—3
4—3	4—3	4—3	3—3	4—3	9—3

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3—2	4—3	4—3	6—3	9—6	8—3
8—2	5—3	3—3	3—3	11—3	7—3
7—3	12—3	7—3	7—3	8—3	6—3
8—3	11—3	11—3	11—3	6—3	11—3
9—3	9—3	12—3	8—3	7—4	7—3
6—8	11—3	10—3	6—3	3—3	6—3

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3+2	4—1	3+7	6+3	8—3	4—2
4+3	3—2	4+2	7—3	4+3	7+3
6—3	7+2	7—3	4+2	7—3	8+3
7—3	3+7	3+8	8—2	6+7	12—3
3+7	9—3	7+3	6+1	5—2	9+3
4+3	7—2	11—2	3—1	4+3	7+3

LESSON XXX.

4 houses from 4 houses leave no houses.
4 roses from 5 roses leave 1 rose.
4 gates from 6 gates leave 2 gates.
4 girls from 7 girls leave 3 girls.
4 kittens from 8 kittens leave 4 kittens.
4 dishes from 9 dishes leave 5 dishes.
4 stools from 10 stools leave 6 stools.
4 cats from 11 cats leave 7 cats.
4 bushes from 12 bushes leave 8 bushes.
4 windows from 13 windows leave 9 windows.

* PROBLEMS.—There are two stools, each has 4 legs; how many legs have both? There are 7 little girls at a picnic, 4 of them return; how many remain? There are 8 roses on the rose-bush; Henry picked 4 of them; how many remain? etc.

* These and the following problems are not for the pupils to *study*, but for the teacher to dictate to the class.

LESSON XXXI.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

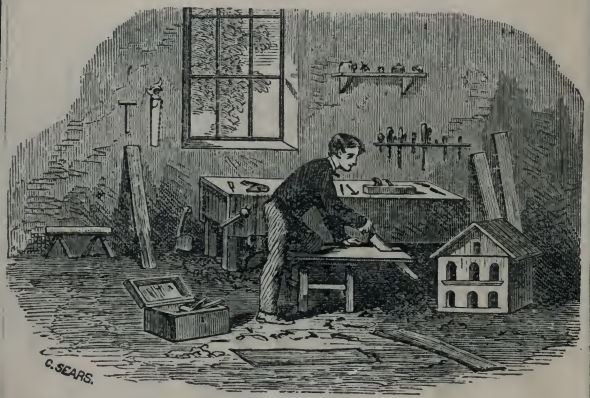
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6—4	5—4	8—4	7—4	9—4	8—4
7—4	6—4	6—4	8—4	8—4	7—4
8—4	9—4	8—4	6—4	6—4	6—4
9—4	4—4	7—4	13—4	8—4	8—4
8—4	6—4	6—4	4—4	9—4	8—4
6—4	7—4	9—4	7—4	11—4	7—4

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4—3	8—4	8—4	7—4	13—4	11—4
8—4	7—4	11—4	6—4	10—4	13—4
7—4	11—4	12—4	8—4	8—4	10—4
9—4	9—4	13—4	4—4	11—4	9—4
6—4	8—4	11—4	8—4	7—4	12—4
12—4	10—4	8—4	7—4	6—4	4—4

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8+4	3+4	8+4	8—4	9+4	4—4
4—4	7+4	4—4	8+4	7+4	8+6
6—4	6—4	8—4	7—4	13—4	4—4
7+4	8—4	8+4	3+4	10—4	8+4
3+4	9+4	5+4	4+6	11—4	7+4
6+7	6+4	7—4	13—4	6+4	13—4



LESSON XXXII.

5 saws from 5 saws leave no saws.
5 boxes from 6 boxes leave 1 box.
5 planes from 7 planes leave 2 planes.
5 hammers from 8 hammers leave 3 hammers.
5 chisels from 9 chisels leave 4 chisels.
5 boards from 10 boards leave 5 boards.
5 benches from 11 benches leave 6 benches.
5 axes from 12 axes leave 7 axes.
5 rules from 13 rules leave 8 rules.
5 cages from 14 cages leave 9 cages.

PROBLEMS.—A little boy agreed to make 8 bird-cages; he has 4 of them done; how many has he yet to make? He had 11 chisels, but broke 3 of them; how many had he left? He used 5 pieces of board, and has 4 left; how many had he at first? He had 8 augers; he loaned three of them; how many had he left? etc.

LESSON XXXIII.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6−5	4−5	10−5	8−5	14−5	14−5
7−5	6−5	8−5	7−5	9−5	6−5
9−5	7−5	7−5	13−5	7−5	8−5
10−5	8−5	6−5	14−5	6−5	9−5
8−5	6−5	8−5	6−5	8−5	11−5
7−5	5−5	9−5	5−5	13−5	6−5

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
8−5	11−5	13−5	14−5	14−5	7−5
7−5	7−5	6−5	7−5	8−5	6−5
6−5	11−5	8−5	8−5	6−5	7−5
9−5	12−5	8−5	8−5	8−5	9−5
8−5	13−5	7−5	13−5	7−5	9−5
13−5	14−5	6−5	6−5	8−5	7−5

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3+5	4+5	8+1	8−2	5+6	5−5
7+5	7−5	9+2	3+8	7+4	7−4
9−5	3+5	7−2	7−5	7−2	4−4
13−5	2+5	7+2	2+5	7+2	0−0
14−5	5−2	13−4	7−2	4+2	1−0
5+3	7−5	7−4	3+4	2+3	1−1

LESSON XXXIV.

6 tents from 6 tents leave no tents.
6 Indians from 7 Indians leave 1 Indian.
6 canoes from 8 canoes leave 2 canoes.
6 paddles from 9 paddles leave 3 paddles.
6 trees from 10 trees leave 4 trees.
6 bushels from 11 bushels leave 5 bushels.
6 birds from 12 birds leave 6 birds.
6 bows from 13 bows leave 7 bows.
6 arrows from 14 arrows leave 8 arrows.
6 spears from 15 spears leave 9 spears.

PROBLEMS.—A party of 12 Indians went to hunt; 6 of them returned; how many were still away? In a village there were 11 wigwams, all but 3 were blown down; how many were blown down? There are 3 Indians in the boats, and 1 is standing on the shore; how many are there in all? etc.

LESSON XXXV.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
14—6	9—6	15—6	14—6	9—6	14—6
14—6	7—6	11—6	7—6	8—6	13—6
15—6	9—6	8—6	8—6	7—6	7—6
11—6	12—6	15—6	14—6	10—6	8—6
14—6	13—6	13—6	15—6	13—6	14—6
13—6	13—6	11—6	12—6	15—6	9—6

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
5+6	7—6	5—3	5+7	15—6	8+6
7—6	8—6	5—3	—3	13—6	7+6
4+2	8+2	8+3	13 5	14—6	7—6
8+2	7+6	6+3	15—3	8—0	5—2
3+1	3—2	7—2	0—0	7+3	3—1
6+1	3+6	6—4	7—3	5+3	6—6

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7—6	8+6	9+6	15—6	13—6	11—6
9+6	13—6	11—6	9—5	7+5	12—6
8+6	11—6	13—6	11—6	6+6	13—6
15—6	15—6	14—6	10—6	14—6	9+6
13—6	12—6	13—6	13—6	13—6	15—6
11—6	15—6	10—6	14—6	9+6	6+6

LESSON XXXVI.

7 turkeys from 7 turkeys leave how many?
7 turkeys from 8 turkeys leave how many?
7 chicks from 9 chicks leave 2 chicks.
7 doves from 10 doves leave 3 doves.
7 cows from 11 cows leave 4 cows.
7 hens from 12 hens leave 5 hens.
7 swallows from 13 swallows leave 6 swallows.
7 pails from 14 pails leave 7 pails.
7 sheds from 15 sheds leave 8 sheds.
7 barns from 16 barns leave 9 barns.

PROBLEMS. — There are 6 chicks and 1 chick in a brood; how many chicks are there? There are 13 swallows in a flock, 7 of them have flown away; how many remain? etc.

LESSON XXXVII.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
10−7	11−7	14−7	14−7	7−7	8−7
16−7	8−7	16−7	13−7	16−7	9−7
13−7	9−7	15−7	16−7	8−7	13−7
11−7	11−7	8−7	15−7	9−7	16−7
16−7	14−7	16−7	8−7	16−7	15−7
14−7	16−7	13−7	9−7	15−7	8−7

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7−1	7+7	13−7	15−7	10−7	15−7
7+7	9+7	14−7	16−7	16−7	16−7
7−3	9−7	15−7	13−7	15−7	11−7
7+4	10+7	16−7	11−7	13−6	12−7
7+5	11−7	15−7	12−7	11−7	9−7
7−6	12−7	7+0	11−7	14−7	7+7

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7+2	13−6	8+3	8+3	8+7	4+5
7−1	3+6	7−2	7+1	5+9	7+7
8−1	4+6	8−3	5−2	6−3	3+8
4−2	7+5	7−4	5+2	9−7	9−7
2+2	5−2	6+2	9−7	13−7	3−1
5+2	5+2	4+3	6+6	16−7	8−2

LESSON XXXVII.

Eight trees from 8 trees leave no trees.
8 ropes from 9 ropes leave 1 rope.
8 boys from 10 boys leave 2 boys.
8 girls from 11 girls leave 3 girls.
8 houses from 12 houses leave 4 houses.
8 barns from 13 barns leave 5 barns.
8 caps from 14 caps leave 6 caps.
8 flowers from 15 flowers leave 7 flowers.
8 bushes from 16 bushes leave 5 bushes.
8 horses from 17 horses leave 9 horses.

PROBLEMS.—John swung his little sister 5 minutes and his little brother 7 minutes; how many minutes did he swing both?

LESSON XXXIX.

(See Manual, Sec. I., Exercise III.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
9−8	8−8	11−8	16−8	16−8	17−8
17−8	17−8	16−8	13−8	13−8	13−8
16−8	13−8	13−8	15−8	12−8	12−8
13−8	16−8	14−9	14−8	17−8	9−8
11−8	15−8	17−8	11−8	12−8	13−8
17−8	12−8	13−8	13−8	13−8	17−8

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
17−8	14−8	9−8	8−2	13−8	14−8
11−8	13−8	8+7	8+1	15−8	17−8
16−8	12−8	8+6	8−0	16−8	16−8
15−8	10−8	8−5	11−8	13−8	11−8
14−8	11−8	8+4	13−8	11−8	12−8
13−8	8+8	8+3	15−8	13−8	13−8

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
17−8	6+9	5+8	8−8	5+8	8+0
16−8	11−8	13−8	8+8	9−8	0+8
13−8	8−8	6+8	3+8	13−8	8−8
14−8	8+8	14−8	13−8	17−8	8−0
17−8	10−8	4+6	14−8	6+8	7+8
13−8	9+8	5+7	4+7	5+8	8+8

LESSON XL.

9 mills from 9 mills leave no mills.
9 trees from 10 trees leave 1 tree.
9 men from 11 men leave 2 men.
9 boats from 12 boats leave 3 boats.
9 dogs from 13 dogs leave 4 dogs.
9 wheels from 14 wheels leave 5 wheels.
9 doors from 15 doors leave 6 doors.
9 bridges from 16 bridges leave 7 bridges.
9 fish-poles from 17 fish-poles leave 8 fish-poles.
9 posts from 18 posts leave 9 posts.

PROBLEMS.—A man caught 8 fishes at one time and 6 at another; how many did he catch in all? If a mill grinds 8 bushels of corn and 12 bushels of wheat; how much more wheat does it grind than corn?

LESSON XLI.

(See Manual, Sec. I., Exercise III.)

Copy, read, and complete the following tables:

Ex. 1.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	9—9	9—3	15—9	13—9	14—9	15—9
	9—8	9—2	18—9	14—9	13—9	16—9
	9—7	9—1	17—9	16—9	18—9	18—9
	9—6	9—0	16—9	18—9	16—9	13—9
	9—5	10—9	18—9	13—9	17—9	15—9
	9—4	11—9	17—9	10—9	9—9	18—9

Ex. 2.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	8+7	4—3	4+6	3+7	4+6	4+6
	5+6	9—4	3+7	8+9	13—9	8+6
	3—2	9+3	18—9	3—1	14—8	9+1
	8—4	8+7	17—8	0+1	7+8	3+1
	9—3	4+3	4+7	8+0	9+5	5—2
	7+6	8+7	6+9	9—3	11—9	7—2

Ex. 3.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	9+9	9+1	8+8	4+9	15—9	4+8
	13—9	18—9	7+9	7+8	7+9	7+9
	18—9	17—9	11—9	9—8	8+9	6+9
	3+7	13—9	8—9	17—9	17—9	13—9
	7+9	6+9	17—9	11—9	16—9	15—9
	18—9	3+9	13—9	13—9	13—9	17—9

LESSON XLII.

Once 2 ducks are 2 ducks.
2 times 2 men are 4 men.
3 times 2 ducks are 6 ducks.
4 times 2 dogs are 8 dogs.
5 times 2 guns are 10 guns.
6 times 2 trees are 12 trees.
7 times 2 ducks are 14 ducks.
8 times 2 islands are 16 islands.
9 times 2 logs are 18 logs.

LESSON XLIII.*

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.

Model.	(1.)	(2.)	(3.)	(4.)
$4\times2=8$	2×2	2×2	5×2	4×2
$3\times2=6$	0×2	3×2	4×2	5×2
$2\times2=4$	3×2	4×2	1×2	3×2
$1\times2=2$	2×3	1×2	1×1	2×2
$5\times2=10$	3×2	3×2	2×2	4×2
$4\times2=8$	4×2	4×2	3×2	1×2

Ex. 2.

Model.	(1.)	(2.)	(3.)	(4.)
$3\times2=6$	6×2	1×2	6×2	4×2
$4\times2=8$	7×2	7×2	7×2	3×2
$5\times2=10$	6×2	3×2	6×2	9×2
$7\times2=14$	7×2	6×2	3×2	6×2
$2\times2=4$	4×2	8×2	8×2	9×2
$0\times2=0$	4×0	3×2	6×2	3×2

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×2	$5+2$	5×2	$4+2$	0×6	$7+2$
$2+3$	$7-2$	$5-2$	$6+2$	6×0	$4-2$
4×2	3×2	$5+2$	$2+6$	$6-0$	$7+2$
$6-2$	7×2	$2+5$	2×6	$6+0$	$9-1$
2×6	$6-2$	$3+0$	6×2	$0+6$	$8-2$
$4-2$	$4+2$	$0+3$	$6-0$	9×2	$4-2$

* *Note for the Teacher.*—Illustrate the meaning and the use of the sign of multiplication ($\times$) in the following Exercises.

LESSON XLIV.

Once 3 ladders are 3 ladders.
2 times 3 poles are 6 poles.
3 times 3 windows are 9 windows.
4 times 3 men are 12 men.
5 times 3 poles are 15 poles.
6 times 3 windows are 18 windows.
7 times 3 hods are 21 hods.
8 times 3 timbers are 24 timbers.
9 times 3 bricks are 27 bricks.

PROBLEMS.—If a man carry 9 bricks in his hod at one load, how many bricks can he carry in going 3 times? There are 9 windows in one story; how many windows in 3 stories?

LESSON XLV.

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	5×3	1×3	2×3	4×3	6×3	3×6
	4×3	7×3	3×3	5×3	7×3	3×2
	3×3	5×3	0×3	4×3	8×3	3×5
	2×3	2×3	5×3	1×3	5×3	5×3
	4×3	4×3	8×3	0×3	7×3	4×3
	5×3	2×3	6×3	3×0	6×3	2×3

Ex. 2.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	4×3	5×3	7×3	1×3	5×3	6×3
	5×3	7×3	6×3	9×4	7×3	7×3
	7×3	6×3	4×3	6×3	6×3	6×3
	8×3	3×3	0×3	7×3	8×3	8×3
	4×3	7×3	6×3	5×3	7×3	6×3
	6×3	9×3	7×3	6×3	9×3	9×3

Ex. 3.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	3×3	4×3	$3+0$	$7+3$	$4+3$	4×3
	4×3	$4-3$	$0+3$	3×7	$3+3$	$4-3$
	$12-3$	$4+3$	$3-0$	$5+3$	$3-3$	$7+3$
	7×3	7×8	$3+0$	3×5	$7-3$	$7-3$
	$7+3$	$7-3$	3×0	6×3	$11-3$	$3+3$
	$7-3$	$7+3$	0×3	3×6	$10-3$	$3-3$

4 times 2 pigs are 8 pigs.

4 times 4 goats are 16 goats.

5 times 5 ducks are 25 ducks.

LESSON XLVI.

Once 4 goats are 4 goats.
2 times 4 feet are 8 feet.
3 times 4 nests are 12 nests.
4 times 4 birds are 16 birds.
5 times 4 pigs are 20 pigs.
6 times 4 kids are 24 kids.
7 times 4 wings are 28 wings.
8 times 4 eggs are 32 eggs.
9 times 4 ears are 36 ears.

LESSON XLVII.

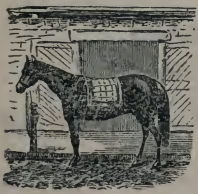
(See Manual, Sec. I., Exercise IV.)

Copy, read, and complete the following tables:

Ex. 1.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	3×4	6×4	6×4	3×4	6×4	4×4
	2×4	2×4	7×4	2×4	3×4	6×4
	0×4	7×4	3×6	4×4	7×4	3×4
	1×4	9×4	8×4	0×4	3×4	7×4
	8×4	3×4	2×4	3×4	6×4	6×4
	3×4	2×4	7×4	3×4	2×4	3×4

Ex. 2.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	3×4	5×4	8×4	6×4	8×4	5×4
	4×4	3×4	7×4	5×4	6×4	7×4
	7×4	7×4	8×4	7×4	8×4	8×4
	9×4	5×4	0×4	3×4	9×4	3×4
	6×4	8×4	9×4	6×4	7×4	7×4
	4×4	7×4	7×4	7×4	6×4	6×4

Ex. 3.	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
	$3+4$	5×4	$6+4$	$8-4$	6×4	$2+4$
	3×4	$5-4$	$6-4$	$8-0$	$6+4$	$2-1$
	$3-0$	$5+4$	6×4	0×8	$13-4$	8×4
	4×4	$13-4$	$11-4$	8×0	7×4	8×4
	7×4	$7+4$	$8-4$	$5-3$	$8+4$	$8+4$
	4×4	$7-4$	$6+4$	4×7	$7+4$	8×3



5 times 1 horse are 5 horses.
5 times 2 cows are 10 cows.

5 times 3 pigs are 15 pigs.
5 times 4 sheep are 20 sheep.

LESSON XLVIII.

Once 5 horses are 5 horses.
2 times 5 posts are 10 posts.
3 times 5 doors are 15 doors.
4 times 5 cows are 20 cows.
5 times 5 pigs are 25 pigs.
6 times 5 stys are 30 stys.
7 times 5 sheep are 35 sheep.
8 times 5 trees are 40 trees.
9 times 5 sheds are 45 sheds.

LESSON XLIX.

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4×5	6×5	5×2	5×5	4×5	2×5
3×5	2×5	5×3	3×5	3×5	3×5
6×5	3×5	6×5	6×5	2×5	4×5
2×5	7×5	2×5	4×5	3×5	3×5
3×5	2×4	3×5	3×5	6×5	6×5
4×5	4×5	2×5	2×5	3×5	2×5

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×5	6×5	8×5	9×5	9×5	3×5
4×5	7×5	9×5	7×5	7×5	5×5
7×5	3×5	7×5	8×5	4×5	9×5
3×5	0×5	6×5	5×5	8×5	7×5
6×5	7×5	7×5	7×5	9×5	6×5
7×5	6×5	8×5	8×5	7×5	3×5

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3+2	7−5	7+5	7−5	8+3	5−0
7×3	6×5	12−5	8−5	5+3	5+0
6+3	6+5	13−5	7−5	5+8	0+5
4−2	14−5	8+5	13−5	5−2	0×5
9−5	13−5	6+5	5−3	7+3	5×5
9×5	12−5	5−0	5+3	8−5	7−5

LESSON L.

Once 6 sloops are 6 sloops.
2 times 6 steamboats are 12 steamboats.
3 times 6 towers are 18 towers.
4 times 6 houses are 24 houses.
5 times 6 men are 30 men.
6 times 6 birds are 36 birds.
7 times 6 men are 42 men.
8 times 6 masts are 48 masts.
9 times 6 flags are 54 flags.

PROBLEMS.—If a ship have 3 masts, how many masts have 6 such ships? There are 12 sea-gulls in a flock; a sailor shot 5 of them; how many escaped?

LESSON LI.

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
5×6	8×6	7×6	8×6	5×6	5×6
4×6	7×6	9×6	3×6	3×6	7×6
3×6	5×6	5×6	7×6	9×6	3×6
4×6	3×6	8×6	3×6	3×6	6×0
3×6	2×6	9×6	9×6	8×6	3×6
2×6	7×2	3×6	8×6	9×5	9×6

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$2+3$	4×2	$4+6$	$5+3$	$4+6$	$13-3$
$6+4$	3×6	$6+6$	$6+2$	$3+6$	$11-6$
4×6	$5+6$	4×6	$4-3$	$6+3$	$12-6$
$3+6$	$6-5$	$3+6$	$6-6$	$6-3$	$4+6$
$6-3$	$13-6$	$8-6$	$6+6$	5×6	$12-6$
$2+6$	2×6	$13-6$	6×3	$4+6$	4×6

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$5+6$	$3+6$	$4+6$	7×0	$5+6$	$15-6$
$5+3$	$6-3$	$4-2$	6×0	6×6	$13-6$
$6+3$	$7+4$	4×6	$6-0$	6×5	$10-6$
$2+6$	7×3	3×6	$6+0$	$6-5$	$16-6$
$6-2$	7×6	$7-6$	$0+6$	$7+6$	$11-6$
$6-0$	$7+6$	$7-0$	0×6	$6+9$	$6+5$

LESSON LII.

Once 7 houses are 7 houses.
2 times 7 windows are 14 windows.
3 times 7 doors are 21 doors.
4 times 7 carts are 28 carts.
5 times 7 men are 35 men.
6 times 7 women are 42 women.
7 times 7 trees are 49 trees.
8 times 7 churches are 56 churches.
9 times 7 dogs are 63 dogs.

PROBLEMS.—If the house has 3 windows, how many windows will 4 such houses have? The man can carry 7 bushels of apples in his cart, how many bushels can he carry in going 5 times? The woman went to market 7 times, and each time carried 7 eggs in her basket; how many eggs did she carry to market? There are 13 large stones by the side of the road; if 6 of them should be carried away, how many would remain? On a rose-bush there are 5 roses; how many roses on 7 such bushes?

LESSON LIII.

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×7	4×7	2×7	5×7	6×7	5×7
4×7	6×7	3×7	0×7	3×7	6×7
6×7	3×7	8×7	5×7	6×7	4×7
5×7	8×7	5×7	8×7	8×7	6×7
3×7	6×7	7×7	8×7	9×7	3×7
7×7	5×7	4×7	6×7	3×7	5×7

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×7	2×7	5×7	3×7	15−7	6+7
4×7	14−7	6×7	6×7	8×7	8×7
12−7	6×7	8×7	1+7	6+7	5+7
3×7	8×7	9−7	8−7	9×7	4×7
6+7	15−7	6+7	0×7	6+7	8×7
5+7	4×7	8×7	6×7	9×7	9−7

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×1	3×3	6+3	15−7	8×5	4+3
3+7	4−3	7−3	7+8	6×7	7×7
4×3	8+6	16−7	16−8	7×6	7−7
7−2	4×3	13−7	4×3	9−7	3−3
7+3	5×7	16−7	9+6	8−6	8−8
6×7	2−0	10−7	16−7	9+7	4−4

LESSON LIV.

Once 8 ponds are 8 ponds.
2 times 8 ducks are 16 ducks.
3 times 8 deer are 24 deer.
4 times 8 trees are 32 trees.
5 times 8 rocks are 40 rocks.
6 times 8 birds are 48 birds.
7 times 8 antlers are 56 antlers.
8 times 8 stones are 64 stones.
9 times 8 bushes are 72 bushes.

PROBLEMS.—Since 1 deer has 4 feet, how many feet have 2 deer? Each duck has two wings; how many wings have 2 ducks? Each bird has 2 wings; how many wings have 8 birds? If a hunter should hoot 3 of the birds, how many would escape?

LESSON LV.

(See Manual, Sec I., Exercise IV.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×8	4×8	4×8	4×8	5×8	5×8
4×8	3×8	3×8	3×8	3×8	6×8
3×8	7×8	6×8	6×8	7×8	7×8
2×7	3×8	3×8	3×8	6×8	4×8
5×8	6×8	7×8	7×8	3×8	3×8
6×8	4×8	6×8	6×8	4×8	6×8

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×8	2×8	2×8	4×8	5×8	3×8
7×8	1×8	4×8	7×8	6×8	7×8
2×8	7×8	7×8	6×8	7×8	6×8
3×8	9×8	6×8	5×8	6×8	3×8
7×8	6×8	3×8	7×8	7×8	7×8
3×8	5×8	1×8	6×8	5×8	6×8

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4+8	17−8	5×7	7−6	7−4	8−8
3+8	11−8	7×8	7+4	15−6	8×0
8−3	3+9	8−8	5+9	7×4	0×8
8−2	6+7	8×8	9+5	8+6	8+0
13−9	4×7	8+8	9×8	8×6	0+8
15−8	7×3	7×8	7+8	8−6	8−0

LESSON LVI.

Once 9 horses are 9 horses.
2 times 9 hammers are 18 hammers.
3 times 9 anvils are 27 anvils.
4 times 9 tubs are 36 tubs.
5 times 9 cups are 45 cups.
6 times 9 barrels are 54 barrels.
7 times 9 boxes are 63 boxes.
8 times 9 whips are 72 whips.
9 times 9 men are 81 men.

PROBLEMS.—One horse has 4 feet, how many feet have 9 horses? A man can shoe 5 horses in a day, how many horses can he shoe in 8 days? If one horse-shoe requires 6 nails, how many nails should be driven in 2 horse-shoes? In 4 horse-shoes? There are 3 horse-shoes hanging on one side of the door and 3 on the other side, how many on both?

LESSON LVII.

(See Manual, Sec. I., Exercise IV.)

Copy, complete, and read the following tables:

x. 1. (1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×9	5×9	3×9	4×9	3×9	4×9
4×9	6×9	6×9	7×9	7×9	5×9
3×9	7×9	3×9	3×9	6×9	7×9
7×9	6×9	7×9	6×9	3×9	6×9
6×9	3×9	3×9	4×9	8×9	8×9
5×9	4×9	0×9	3×9	3×9	3×9

x. 2. (1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×9	3×3	5×3	$4+3$	$15-7$	$9-9$
$4+6$	$4-3$	$7-3$	$9-7$	$16-8$	$9+0$
4×7	$4+6$	$18-9$	7×9	$10-9$	9×0
$3-2$	$8-2$	$13-7$	8×6	$7-3$	$0+9$
$7-2$	$13-9$	$15-6$	$6-6$	$7+3$	0×9
$9-8$	$6-6$	$9-8$	$4+8$	$4+3$	$9-0$

x. 3. (1.)	(2.)	(3.)	(4.)	(5.)	(6.)
3×7	3×7	6×7	$4+7$	$8+6$	$8+3$
4×7	$8-4$	5×7	$8+6$	$3+7$	$7+3$
$3+7$	$7-7$	$3+4$	8×7	$9+3$	8×7
9×9	$8+3$	$6+9$	$9+7$	9×3	9×7
$8+7$	$7+7$	$6-1$	9×7	$9-3$	$6-4$
6×9	4×8	$8+7$	$8+3$	$4+6$	$3+4$

LESSON LVIII.*

How many times can 2 tables be taken from 2 tables?
How many times can 2 globes be taken from 4 globes?
How many times are 2 maps contained in 6 maps?
How many times are 2 desks contained in 8 desks?
How many times are 2 boys contained in 10 boys?
How many are half of 12 girls?
How many are one half of 14 books?
16 chairs are how many times 2 chairs?
18 window-panes are how many times 2 window-panes?

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* *Note for the Teacher.*—The teacher should not fail to show by means of objects, that 2 can be taken from a number as often as 2 is contained in it, or, that the two forms of expression are essentially the same.

LESSON LIX.*

(See Manual, Sec. I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

Model.	(1.)	(2.)	(3.)	(4.)
$4 \div 2 = 2$	$2 \div 2$	$2 \div 2$	$2 \div 2$	$4 \div 2$
$8 \div 2 = 4$	$4 \div 2$	$8 \div 2$	$4 \div 2$	$16 \div 2$
$6 \div 2 = 3$	$8 \div 2$	$4 \div 2$	$12 \div 2$	$14 \div 2$
$2 \div 2 = 1$	$10 \div 2$	$12 \div 2$	$14 \div 2$	$12 \div 2$
$8 \div 2 = 4$	$8 \div 2$	$10 \div 2$	$10 \div 2$	$16 \div 2$
$2 \div 2 = 1$	$4 \div 2$	$6 \div 2$	$14 \div 2$	$8 \div 2$

Ex. 2.

Model.	(1.)	(2.)	(3.)	(4.)
$16 \div 2 = 8$	$12 \div 2$	$10 \div 2$	$16 \div 2$	$4 \div 2$
$18 \div 2 = 9$	$16 \div 2$	$8 \div 2$	$12 \div 2$	$8 \div 2$
$12 \div 2 = 6$	$18 \div 2$	$6 \div 2$	$10 \div 2$	$12 \div 2$
$10 \div 2 = 5$	$20 \div 2$	$8 \div 2$	$8 \div 2$	$14 \div 2$
$8 \div 2 = 4$	$18 \div 2$	$4 \div 2$	$18 \div 2$	$4 \div 2$
$6 \div 2 = 3$	$16 \div 2$	$16 \div 2$	$12 \div 2$	$8 \div 2$

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$16 \div 2$	$8 - 2$	$7 - 2$	$5 - 2$	$5 - 2$	$4 - 2$
$16 - 8$	$8 + 2$	$16 \div 2$	$2 - 2$	$6 \div 2$	$6 \div 2$
$8 + 8$	$8 \div 2$	$14 \div 2$	$8 + 2$	$7 + 2$	$8 - 2$
$7 - 6$	8×2	6×2	$10 \div 2$	$2 + 8$	$18 \div 2$
$7 + 2$	$9 - 2$	$2 + 8$	$7 - 2$	2×8	$7 - 2$
$12 - 9$	$6 - 2$	$9 - 2$	$4 \div 2$	$8 \div 2$	$12 - 2$

* *Note for the Teacher.*—Illustrate the meaning and the use of the sign of Division (÷) in the following Exercises.

LESSON LX.

3 carts are once 3 carts.
6 horses are 2 times 3 horses.
9 boxes are 3 times 3 boxes.
12 pillars are 4 times 3 pillars.
15 windows are 5 times 3 windows.
18 men are 6 times 3 men.
21 doors are 7 times 3 doors.
24 canes are 8 times 3 canes.

PROBLEMS.—A carman had 27 boxes to take to the depot, how many loads will they make if he draws 3 boxes at a load? A boy has 15 cents, how many pencils can he buy if they cost 3 cents each? A lady has 12 dollars, and if silk is 3 dollars a yard, how many yards can she buy? 12 window-panes are how many times 8 window-panes?

LESSON LXI.

(See Manual, Sec. I., Exercise V.)

Copy, read, and complete the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6÷3	6÷3	12÷3	15÷3	15÷3	15÷3
12÷3	9÷3	15÷3	18÷3	21÷3	21÷3
9÷3	15÷3	18÷3	15÷3	24÷3	27÷3
3÷3	12÷3	6÷3	21÷3	18÷3	24÷3
9÷3	9÷3	9÷3	18÷3	15÷3	18÷3
6÷3	12÷3	3÷3	6÷3	12÷3	15÷3

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
27÷3	15÷3	18÷3	21÷3	18÷3	12÷3
24÷3	6÷3	21÷3	18÷3	21÷3	9÷3
15÷3	9÷3	24÷3	24÷3	27÷3	6÷3
21÷3	12÷3	27÷3	27÷3	18÷3	18÷3
27÷3	15÷3	15÷3	21÷3	27÷3	24÷3
24÷3	18÷3	24÷3	15÷3	12÷3	27÷3

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6+3	4×3	8+3	12÷3	6÷3	8×3
4−3	9×3	9+3	9×3	9÷3	3×3
7+3	12÷3	11−3	7+3	11−3	11−3
8×3	6+3	8×3	8−3	8×3	24÷3
24÷3	8−3	27÷3	9÷3	9+3	8+3
7+3	11−3	7+3	8×3	7+3	3+9

LESSON LXII.

4 birds are contained in 4 birds once.
4 spokes are contained in 8 spokes 2 times.
4 bags are contained in 12 bags 3 times.
4 mills are contained in 16 mills 4 times.
4 posts are contained in 20 posts 5 times.
4 houses are contained in 24 houses 6 times.
4 windows are contained in 28 windows 7 times.
4 horses are contained in 32 horses 8 times.
4 men are contained in 36 men 9 times.

PROBLEMS.—One wind-mill has 4 wings, how many wings will 4 such mills have? How many loads will 16 bags of corn make if a man draws 4 bags at a load? There are 4 windows in the house, how many windows will 6 such houses have? There are 8 spokes in a wheel; how many spokes in 2 wheels? If a cart have 2 wheels, how many wheels have 4 carts?

LESSON LXIII.

(See Manual, Sec. I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
4÷4	4÷4	8÷4	24÷4	28÷4	32÷4
8÷4	12÷4	12÷4	16÷4	32÷4	20÷4
12÷4	16÷4	16÷4	12÷4	28÷4	28÷4
8÷4	12÷4	20÷4	8÷4	24÷4	24÷4
12÷4	8÷4	12÷4	36÷4	16÷4	32÷4
4÷4	16÷4	8÷4	20÷4	12÷4	28÷4

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
32÷4	4÷4	8÷4	4÷4	28÷4	12÷4
24÷4	8÷4	12÷4	8÷4	20÷4	20÷4
12÷4	24÷4	32÷4	16÷4	16÷4	28÷4
8÷4	36÷4	36÷4	24÷4	20÷4	32÷4
20÷4	28÷4	24÷4	28÷4	28÷4	8÷4
16÷4	20÷4	12÷4	36÷4	36÷4	4÷4

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
24÷4	32÷4	6×4	8—4	5×4	4×8
8×4	8×4	7—4	7×4	7—4	9+4
12—4	6—4	8×4	36÷4	8×4	9—4
6+4	8+4	7+4	7—4	4×8	32÷4
8÷4	13—4	13—4	12—4	9×4	7×4
7+4	7×4	7×4	6+4	36÷4	6—4

LESSON LXIV.

5 barrels are once 5 barrels.
10 men are 2 times 5 men.
15 boxes are 3 times 5 boxes.
20 boats are 4 times 5 boats.
25 logs are 5 times 5 logs.
30 baskets are 6 times 5 baskets.
35 sea-gulls are 7 times 5 sea-gulls.
40 rods are 8 times 5 rods.
45 lines are 9 times 5 lines.

PROBLEMS.—There were 17 piles lying on the dock ; 9 have been driven ; how many remain ?

LESSON LXV.

(See Manual, Sec. I., Exercise V.)

Copy, read, and complete the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$5 \div 5$	$25 \div 5$	$30 \div 5$	$15 \div 5$	$40 \div 5$	$40 \div 5$
$15 \div 5$	$15 \div 5$	$25 \div 5$	$30 \div 5$	$15 \div 5$	$30 \div 5$
$10 \div 5$	$5 \div 5$	$20 \div 5$	$35 \div 5$	$25 \div 5$	$45 \div 5$
$20 \div 5$	$10 \div 5$	$15 \div 5$	$40 \div 5$	$35 \div 5$	$15 \div 5$
$10 \div 5$	$20 \div 5$	$10 \div 5$	$35 \div 5$	$20 \div 5$	$25 \div 5$
$5 \div 5$	$25 \div 5$	$15 \div 5$	$15 \div 5$	$40 \div 5$	$20 \div 5$

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$25 \div 5$	$15 \div 5$	$20 \div 5$	$5 \div 5$	$10 \div 5$	$15 \div 5$
$30 \div 5$	$10 \div 5$	$35 \div 5$	$15 \div 5$	$20 \div 5$	$25 \div 5$
$40 \div 5$	$5 \div 5$	$40 \div 5$	$25 \div 5$	$30 \div 5$	$30 \div 5$
$20 \div 5$	$30 \div 5$	$25 \div 5$	$35 \div 5$	$40 \div 5$	$40 \div 5$
$45 \div 5$	$40 \div 5$	$30 \div 5$	$45 \div 5$	$15 \div 5$	$45 \div 5$
$10 \div 5$	$45 \div 5$	$20 \div 5$	$25 \div 5$	$20 \div 5$	$35 \div 5$

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$25 \div 5$	$30 \div 5$	$7+5$	$45 \div 5$	$6+5$	4×5
4×5	7×5	$8+5$	7×5	$12-6$	$11-5$
$3+5$	$5-5$	$13-5$	5×5	$8+7$	$10 \div 5$
$8-5$	$8+5$	$40 \div 5$	$10-5$	$8-5$	3×5
$14-5$	5×8	6×5	$10 \div 5$	8×5	$7+5$
$10 \div 5$	$13-5$	$7-5$	10×5	$6+5$	$9+5$

LESSON LXVI.

6 churches are once 6 churches.
12 sheep are 2 times 6 sheep.
18 ducks are 3 times 6 ducks.
24 dogs are 4 times 6 dogs.
30 men are 5 times 6 men.
36 boys are 6 times 6 boys.
42 saddles are 7 times 6 saddles.
48 bridles are 8 times 6 bridles.
54 horses are 9 times 6 horses.

PROBLEMS.—Willie rode 2 hours every day for a week, how many hours did he ride in all?

LESSON LXVII.

(See Manual, Sec I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5)	(6.)
$6 \div 6$	$30 \div 6$	$30 \div 6$	$42 \div 6$	$48 \div 6$	$54 \div 6$
$18 \div 6$	$18 \div 6$	$36 \div 6$	$12 \div 6$	$30 \div 6$	$48 \div 6$
$12 \div 6$	$6 \div 6$	$24 \div 6$	$6 \div 6$	$36 \div 6$	$36 \div 6$
$24 \div 6$	$18 \div 6$	$18 \div 6$	$36 \div 6$	$48 \div 6$	$42 \div 6$
$6 \div 6$	$30 \div 6$	$12 \div 6$	$42 \div 6$	$24 \div 6$	$24 \div 6$
$18 \div 6$	$24 \div 6$	$6 \div 6$	$18 \div 6$	$18 \div 6$	$54 \div 6$

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$42 \div 6$	$12 \div 6$	$24 \div 6$	$30 \div 6$	$42 \div 6$	$18 \div 6$
$48 \div 6$	$18 \div 6$	$30 \div 6$	$36 \div 6$	$30 \div 6$	$24 \div 6$
$30 \div 6$	$30 \div 6$	$42 \div 6$	$42 \div 6$	$36 \div 6$	$36 \div 6$
$12 \div 6$	$42 \div 6$	$48 \div 6$	$54 \div 6$	$48 \div 6$	$48 \div 6$
$54 \div 6$	$54 \div 6$	$18 \div 6$	$6 \div 6$	$18 \div 6$	$42 \div 6$
$30 \div 6$	$18 \div 6$	$12 \div 6$	$18 \div 6$	$12 \div 6$	$54 \div 6$

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
$24 \div 6$	6×8	$7 - 6$	5×6	4×6	$13 - 6$
$24 \div 4$	5×6	5×6	$7 - 5$	8×8	$7 - 6$
2×6	$13 - 6$	$13 - 6$	$13 - 6$	$7 - 6$	8×6
$15 - 6$	$7 + 6$	$15 - 6$	7×6	7×6	$4 + 6$
$13 - 6$	$8 + 6$	$8 + 6$	$12 \div 6$	$14 - 6$	8×6
8×6	$48 \div 6$	8×6	$8 - 6$	$11 - 6$	7×6

LESSON LXVIII.

7 baskets are once 7 baskets.
14 hop-poles are 2 times 7 hop-poles.
21 men are 3 times 7 men.
28 girls are 4 times 7 girls.
35 hop-vines are 5 times 7 hop-vines.
42 birds are 6 times 7 birds.
49 hats are 7 times 7 hats.
56 coats are 8 times 7 coats.
63 knives are 9 times 7 knives.

PROBLEMS.—There are 8 birds flying away from the hop-yard; they are separated into 2 flocks; how many birds in each flock?

LESSON LXIX.

(See Manual, Sec. I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
7÷7	28÷7	42÷7	49÷7	49÷7	63÷7
14÷7	21÷7	14÷7	42÷7	56÷7	28÷7
28÷7	35÷7	21÷7	28÷7	42÷7	14÷7
21÷7	21÷7	35÷7	49÷7	63÷7	42÷7
14÷7	14÷7	42÷7	14÷7	56÷7	21÷7
28÷7	7÷7	14÷7	7÷7	28÷7	56÷7

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
49÷7	21÷7	21÷7	28÷7	28÷7	14÷7
42÷7	14÷7	7÷7	14÷7	7÷7	21÷7
35÷7	35÷7	28÷7	42÷7	21÷7	35÷7
28÷7	49÷7	35÷7	49÷7	35÷7	49÷7
56÷7	63÷7	56÷7	63÷7	49÷7	63÷7
21÷7	42÷7	63÷7	35÷7	63÷7	56÷7

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
49÷7	21÷7	8+7	5×7	4×7	4×7
6×7	35÷7	5+7	8×7	6+7	6+7
8×7	16−7	9−7	28÷7	9+7	9+7
15−7	4×7	6×7	56÷7	9−7	8−7
6+7	5×7	5×7	8×7	8×7	7×7
5+7	6+7	63÷7	6×7	42÷7	28÷7

LESSON LXX.

8 cows are once 8 cows.
16 hens are 2 times 8 hens.
24 houses are 3 times 8 houses.
32 feet are 4 times 8 feet.
40 claws are 5 times 8 claws.
48 dishes are 6 times 8 dishes.
56 boards are 7 times 8 boards.
64 doors are 8 times 8 doors.
72 windows are 9 times 8 windows.

PROBLEMS.—Henry found a nest containing 8 eggs; how many eggs will 2 such nests contain? The cow gives 8 quarts of milk every night and morning; how many quarts does she give each day?

LESSON LXXI.

(See Manual, Sec. I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
32÷8	40÷8	56÷8	24÷8	48÷8	72÷8
16÷8	8÷8	40÷8	32÷8	64÷8	32÷8
8÷8	24÷8	32÷8	56÷8	48÷8	64÷8
32÷8	32÷8	16÷8	48÷8	64÷8	48÷8
24÷8	40÷8	24÷8	40÷8	56÷8	64÷8
16÷8	24÷8	48÷8	56÷8	40÷8	40÷8

Ex. 2.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
40÷8	48÷8	56÷8	24÷8	24÷8	48÷8
48÷8	56÷8	72÷8	8÷8	56÷8	56÷8
72÷8	72÷8	56÷8	48÷8	40÷8	72÷8
32÷8	24÷8	40÷8	16÷8	48÷8	24÷8
48÷8	64÷8	48÷8	64÷8	32÷8	8÷8
32÷8	40÷8	64÷8	24÷8	24÷8	72÷8

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
40÷8	32÷8	72÷8	40÷8	15−8	48÷8
6×8	4×8	64÷8	6×8	48÷8	6+8
7+8	6×8	7×8	72÷8	6×8	16−8
16−8	8×8	3×8	9−8	15−8	11−8
17−8	13−8	15−8	7+8	9+8	3×8
14−8	5+8	12−8	6×8	6+8	8×7

LESSON LXXII.

9 men are once 9 men.
18 boats are 2 times 9 boats.
27 poles are 3 times 9 poles.
36 bridges are 4 times 9 bridges.
45 trees are 5 times 9 trees.
54 rocks are 6 times 9 rocks.
63 birds are 7 times 9 birds.
72 fishes are 8 times 9 fishes.
81 fish-lines are 9 times 9 fish-lines.

PROBLEMS.—A man caught 4 fishes the first hour and 7 the next hour, how many did he catch in the 2 hours?

LESSON LXXIII.

(See Manual, Sec I., Exercise V.)

Copy, complete, and read the following tables:

Ex. 1.

(1.)	(2.)	(3.)	(4.)	(5)	(6.)
9÷9	45÷9	45÷9	63÷9	72÷9	36÷9
18÷9	27÷9	54÷9	27÷9	63÷9	63÷9
36÷9	45÷9	36÷9	18÷9	54÷9	54÷9
27÷9	36÷9	18÷9	63÷9	45÷9	72÷9
18÷9	45÷9	9÷9	54÷9	72÷9	81÷9
27÷9	36÷9	27÷9	63÷9	27÷9	63÷9

Ex. 2.

(1)	(2.)	(3.)	(4.)	(5.)	(6.)
54÷9	45÷9	27÷9	18÷9	45÷9	18÷9
63÷9	54÷9	36÷9	27÷9	63÷9	9÷9
81÷9	63÷9	63÷9	9÷9	81÷9	27÷9
18÷9	81÷9	81÷9	45÷9	72÷9	63÷9
45÷9	36÷9	63÷9	27÷9	81÷9	36÷9
27÷9	63÷9	54÷9	81÷9	18÷9	45÷9

Ex. 3.

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
6×8	5×9	6+9	9+1	45÷9	63÷9
81÷9	72÷9	17−9	9×9	5×9	4×9
8×9	63÷9	36÷9	27÷9	45÷9	9+9
3+9	18−9	8×9	10−9	5+8	9−9
9+6	9×9	6+9	1+9	13−9	8×9
17−9	7×7	17−9	10+8	8×8	18÷9

FRACTIONS.

LESSON LXXIV.

(See Manual, Sec. I., Exercise VI.)



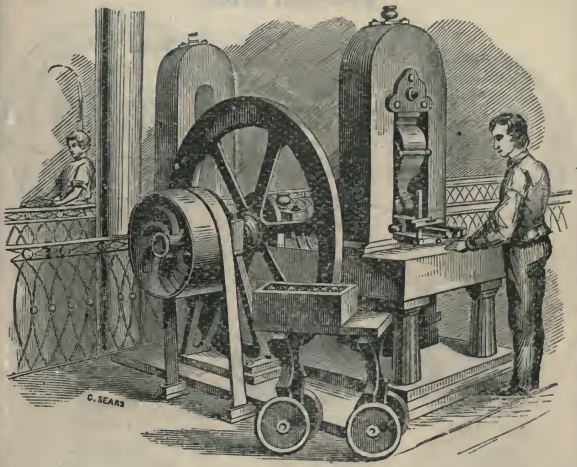

Two halves. Three thirds. Four fourths. Five fifths.

How many halves in one apple?
How many halves in one peach?
How many thirds in one pie?
How many thirds in one fish?
How many fourths in one horse?
How many fourths in one loaf?
How many fifths in one string?
How many fifths in one stick?




One half. One third. Two fourths. Three fifths.

How many halves make one melon?
How many thirds make one pear?
How many fourths make one orange?
How many fifths make one apple?



UNITED STATES MINT.

Money.

A mint is the place where money is made.

Federal Money.

Federal money is the currency of the United States.

LESSON LXXV.

(See Manual, Sec. I., Exercise VII.)

10 mills (m.)	make 1 cent.	ct.
10 cents	make 1 dime.	d.
10 dimes	make 1 dollar.	$.
10 dollars	make 1 eagle.	E.

American Coins.

Silver.

Gold.

Silver.

Nikel.

Silver.

Gold.

Gold.

Gold.

Gold.

Copper.

Silver.

Silver.

LESSON LXXVI.

(See Manual, Sec. I., Exercise VII)

English Money.

English money is the currency of Great Britain.

TABLE.

4 farthings (far.)	make	1 penny.	d.
12 pence	make	1 shilling.	s.
20 shillings	make	1 pound or sovereign.	£.

Copper—2 cts.

Silver—12 cts.

Silver—24 cts.

Far.—Copper—5 mills.

Sov.—Gold—$4 84.

Silver—18 cents.

Note.—The franc is a French coin.

Avoirdupois Weight.

Avoirdupois weight is used for weighing all common articles.

LESSON LXXVII.

(See Manual, Sec. I., Exercise VII.)

16 drams (dr.) make		1	ounce.	oz.
16 ounces make		1	pound.	lb.
25 pounds make		1	quarter,	qr.
100 pounds or 4 quarters	make	1	hundred weight	cwt.
20 hundred weight make 1 ton.				T.

LESSON LXXVIII.

Avoirdupois Weight—Continued.

27½ gr.* 437½ gr. 7000 gr.

* *Note.*—The exact weight of an Avoirdupois dram is $27\frac{11}{32}$ Troy grains.

Troy Weight.

Troy weight is used in weighing gold, silver, and jewels, and in philosophical experiments.

LESSON LXXIX.

(See Manual, Sec. I., Exercise VII.)

24 grains	(gr.)	make 1 pennyweight.	pwt.
20 pennyweights		make 1 ounce.	oz.
12 ounces		make 1 pound.	lb.
3·2 grains		make 1 carat.	k.

24 grs. 480 grs. 5760 grs.

Note.—3½ grains make a carat, Diamond weight.

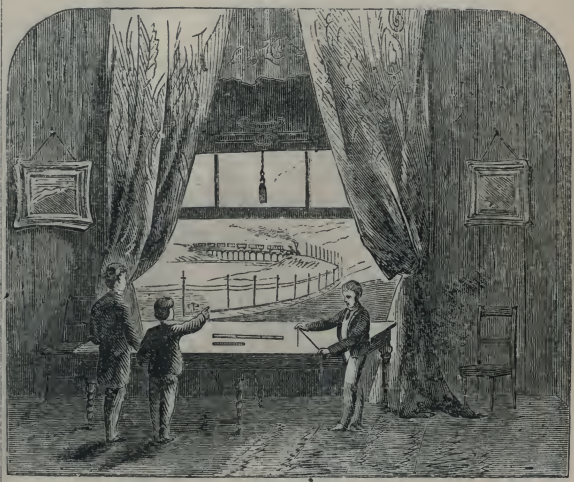
Apothecaries' Weight.

LESSON LXXX.

(See Manual, Sec. I, Exercise VII.)

20 grains (gr.)	make	1	scruple.	sc. or ℈.
3 scruples	make	1	dram.	dr. or ʒ.
8 drams	make	1	ounce.	oz. or ℥.
12 ounces	make	1	pound.	lb. or ℔.

20 grs. 60 grs. 480 grs. 5760.



Long Measure.

TEACHER.—Arthur, can you tell me how far a *mile* is?

ARTHUR.—If I place 12 sticks an *inch* long in a row, the row will be a *foot* long.

If I make a measure 3 times as long as the row of sticks, it will be a *yard* measure, like the one on the table.

Five and a half times the yard measure will be a *rod*, and is just the width of the room.

Forty times the width of the room is the distance between every other telegraph pole, or one *furlong*.

Eight times the distance between every other telegraph pole is the distance to the railroad-bridge, or one *mile*.

LESSON LXXXI.

(See Manual, Sec. I., Exercise VII.)

Long Measure.

Long measure is used for measuring distance.

TABLE.

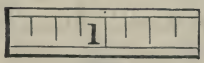
12 inches (in.)	make 1	foot.		ft.
3 feet	make 1	yard.		yd.
$5\frac{1}{2}$ yards 11 half yards	make 1	rod, perch, or pole.		rd.
40 rods	make 1	furlong.		fur.
8 furlongs	make 1	mile.		mi.
$69\frac{1}{4}$ statute miles 277 quarter miles	make 1	degree.		deg.
360 degrees	make 1	circle of the earth.		cir.

Gunter's Chain Measure.

Gunter's Chain Measure is used by surveyors.

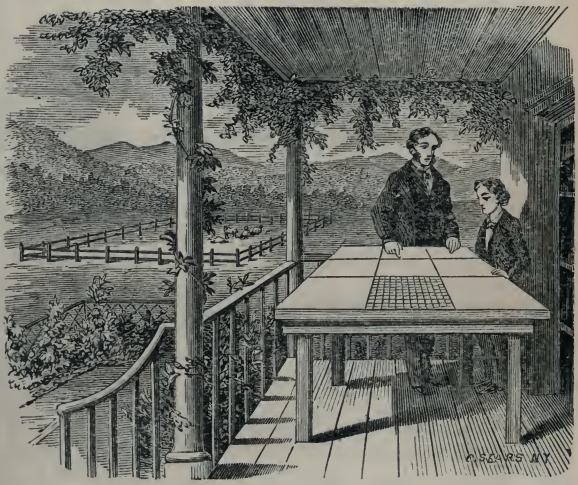
TABLE.

25 links (li.)	make 1	rod.		rd.
4 rods or 100 links	make 1	chain.		ch.
80 chains	make 1	mile.		mi.



1 Inch.

Note.—A link is about $7\frac{7}{8}$ inches in length.



Square Measure.

FATHER.—Charley, if you wish to know the size of an acre, cut 144 pieces of paper one *inch* square, and place them on the table; this is called a square *foot*.

To make a square *yard*, place 9 single squares in a square, which is just the size of the table.

To make a piece of land the size of the grass-plat in the door-yard, it will require 30¼ square yards, which is called a square *rod*.

Forty square rods is just one *rood*, or a *quarter* of an acre of land, and is the size of the lot across the road in which you see the sheep.

Four such lots contain 4 roods of land, and is called an *acre*.

LESSON LXXXII.

(See Manual, Sec. I., Exercise VII.)

Square Measure.

Square measure is used in computing the area of surfaces.

TABLE.

144	square inches (in.)	make 1	square foot.
9	square feet	make 1	square yard.
$30\frac{1}{4}$ or 121	square yards or qr. square yards	make 1	square rod.
40	square rods	make 1	rood or quarter of an acre.
4	quarter acres or roods	make 1	acre.
640	acres	make 1	square mile or section.

Surveyors' Square Measure.

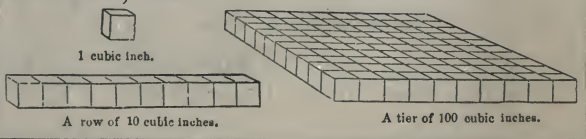
Surveyors' square measure is used in computing the area or contents of portions of land.

TABLE.

625	square links	make 1	square rod.	sq. rd.
16	square rods	make 1	square chain.	sq. ch.
10	square chains	make 1	acre.	A.
640	acres	make 1	square mile.	sq. mi.
36	square miles	make 1	township.	T.

Cubic Measure.

In building the walls of a cellar, or of a building, the amount of stone or brick used is determined by cubic measure. A cubic inch is a square block 1 inch long, 1 inch wide, and 1 inch thick, thus:



LESSON LXXXIII.

(See Manual, Sec. I., Exercise VII.)

Cubic Measure.

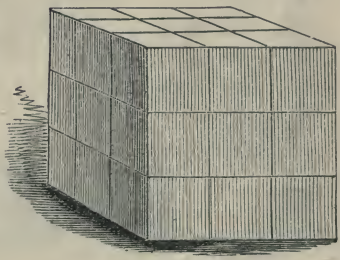
Cubic measure is used to estimate the contents of solids.

TABLE.

1728	cubic inches	make 1 cubic foot.
27	cubic feet	make 1 cubic yard.
40	cubic ft. of round timber or	make 1 ton or load.
50	cubic ft. of hewn timber	
16	cubic feet	make 1 cord foot.
8	cord feet or	make 1 cord of wood.
128	cubic feet	
$24\frac{3}{4}$	cubic feet	make 1 perch of stone or masonry.

Cubic inch.

Cubic foot.



Cubic yard.

Wine Measure.

Wine measure is used in measuring liquids.

LESSON XXXIX.

4	gills	make 1 pint.	pt.
2	pints	make 1 quart.	qt.
4	quarts	make 1 gallon.	gal.
31½ gallons or 63 half gal.		make 1 barrel.	bbl.
2 barrels or 63 gallons		make 1 hogshead.	hhd.

Dry Measure.

Dry measure is used in measuring vegetables and articles not fluid.

LESSON LXXXV.

(See Manual, Sec. I., Exercise VII.)

2 pints (pt.)	make 1 quart.	qt.
8 quarts	make 1 peck.	pk.
4 pecks	make 1 bushel.	bu.

Measure of Time.

Time is the measure of duration.

LESSON LXXXVI.

(See Manual, Sec. I., Exercise V.)

60 seconds (sec.)	make 1 minute.	min.
60 minutes	make 1 hour.	h.
24 hours	make 1 day.	da.
7 days	make 1 week.	wk.
4 weeks and 2 days or 30 days	make one month.	mo.
365 days	make a year.	yr.
52 weeks	make a year.	yr.
12 calendar months	make a year.	yr.

LESSON LXXXVII.

(See Manual, Sec. I., Exercise VI.)

Circular Measure.

Circular measure is used in measuring arcs of circles.

TABLE.

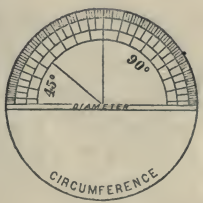
60 seconds	(″)	make 1 minute.	′
60 minutes		" 1 degree.	°
90 degrees		" 1 quadrant.	qad.
4 quadrants		" 1 circumference.	cir.

Angular Measure.

Angular measure is used for measuring difference of directions.

TABLE.

60 seconds	(″)	make 1 minute.	
60 minutes		" 1 degree.	°
90 degrees		" 1 right angle.	r. a.



LESSON LXXXVIII.

Miscellaneous Tables.

DIVISION OF THE YEAR.

Season.	Names of months.	No. of days.	Abbreviations.
Winter,	1. January,	31	Jan.
	2. February,	28 or 29	Feb.
Spring,	3. March,	31	Mar.
	4. April,	30	Apr.
	5. May,	31	—,
Summer,	6. June,	30	Jun.
	7. July,	31	—,
	8. August,	31	Aug.
Autumn,	9. September,	30	Sept.
	10. October,	31	Oct.
	11. November,	30	Nov.
Winter,	12. December,	31	Dec.
		365 or 366	

COUNTING.

12 units or things make 1 dozen.
12 dozen " 1 gross.
12 gross " 1 great gross.
20 units " 1 score.

PAPER.

24 sheets make 1 quire.
20 quires " 1 ream.
2 reams " 1 bundle.
5 bundles " 1 bale.

Seasons.

Spring	March, April, May.	Summer	June, July, August.
Autumn	September, October, November.	Winter	December, January, February,

Thirty days hath September,
April, June, and November,
February hath twenty-eight,*
And thirty-one the others rate.

* Every leap-year, February has twenty-nine days.

LESSON LXXXIX.

Table of Roman Notation.

I	denotes one.	XXX	denotes thirty.
II	" two.	XL	" forty.
III	" three.	L	" fifty.
IV	" four.	LX	" sixty.
V	" five.	LXX	" seventy.
VI	" six.	LXXX	" eighty.
VII	" seven.	XC	" ninety.
VIII	" eight.	C	" one hundred.
IX	" nine.	CC	" two hundred.
X	" ten.	CCC	" three hundred.
XI	" eleven.	CCCC	" four hundred.
XII	" twelve.	D	" five hundred.
XIII	" thirteen.	DC	" six hundred.
XIV	" fourteen.	DCC	" seven hundred.
XV	" fifteen.	DCCC	" eight hundred.
XVI	" sixteen.	DCCCC	" nine hundred.
XVII	" seventeen.	M	" one thousand.
XVIII	" eighteen.	MD	" fifteen hundred
XIX	" nineteen.	MM	" two thousand.
XX	" twenty.	$\overline{X}$	" ten thousand.
XXI	" twenty-one.	$\overline{XI}$	" eleven th'sand.
XXII	" twenty-two.	$\overline{M}$	" one million.
XXIII	" twenty-three.	$\overline{MM}$	" two millions.
XXIV	" twenty-four.		

FINIS.